

ABSTRACT

A method for fabricating a semiconductor memory device is provided to increase the etch selectivity of photoresist by changing the matter properties thereof in forming a trench isolation region. The method includes the steps of: depositing first and second insulating layers on a semiconductor substrate where a shallow trench isolation (STI) region and a deep trench isolation (DTI) region are defined; forming the STI region by selectively etching the second and first insulating layers and the semiconductor substrate; forming a photoresist to cover the STI region and curing the surface of the photoresist; and forming the DTI region by using the cured photoresist and the second insulating layer as a mask.